FOREWORD

It's over 120 years since Dr. Anandi Bai Joshi struggled to become South Asia's first woman trained in western allopathic medicine. We have made immense progress in the medical field. Today, South Asian women are leaders in every profession to such an extent that Indian women doctors are most popular in the UK. Women, generally have a tendency to care more for their loved ones and neglect their own health. I urge every woman reading this, to lead a balanced life, eat healthy, exercise regularly, avoid addictive substances, visit a doctor regularly and have yearly check ups.

I dedicate this Women’s Edition to a Maharashtrian girl who was married at 9 and lost her first child at 14 and was inspired to study medicine in the United States when women weren't even allowed to study in college, Dr. Anandi Bai Joshi.

"Communities and countries and ultimately the world are only as strong as the health of their women"
- Michelle Obama

FROM THE DESK OF CEO

International Women's Day is celebrated on 8th March but I believe that every woman should celebrate life every day. You should pamper yourself by taking care of your own mental and physical health including your skin and hair that are indicators of general health. It gives me immense pleasure to present the Women's special edition to educate you and dispel myths on skin and hair care, PCOS, pregnancy, contraception, menopause, cancer, cardiac ailments, rheumatology and most important mental well being.

Jaslok Hospital caters to every girl and woman’s medical needs right from conception. Jaslok employs 435 women who comprise 35 percent of all employees and 450 female nurses, so we are a team of women experienced in caring for women.

"Take care of your body, it's the only place you have to live."
- Jim Rohn

FIRST WOMEN DOCTORS OF INDIA

Towards the end of the 19th century, women refused medical aid from male doctors, and hence, it was difficult to get help in complicated deliveries and gynaecological problems, and therefore maternal and foetal mortality was high.

The first women doctors made a considerable impact on millions of lives. With their dedication and perseverance they continued to struggle and inspire despite obstacles they succeeded.

Mr. George Kittredge, an American businessman in Mumbai being aware of this, decided to have a hospital exclusively for women patients, so that he could bring medical aid to women by engaging competent, experienced women doctors from Europe, and also to arrange for medical education for women in India.

Mr. Kittredge, along with some Indian philanthropists collected money and started the Cama and Albless Hospital which would be exclusively for women and children. In 1883, Medical Women of India Fund was started and there were several women who first responded to training in medicine.

Dr. Edith Pechey – Phipson was the first British woman
brought to India to treat women and to train Indian women to take charge. The Cama Hospital was started in 1886 to treat women exclusively and Dr. Edith became its first Superintendent. The first Indian woman to study medicine in the west was Anandi Bai Joshi, who was married at 9 and lost her first child at 14. This inspired her to serve women as a doctor. She went to USA in 1883, joined the Women's Medical College in Pennsylvania. She returned to India in 1888 to work in Kolhapur, but unfortunately she developed tuberculosis and died after a year. Madras University was the first in India to allow women to be educated on the same terms as men. Bombay University followed suit. Dr. (Mrs.) Annie was the first Indian to have studied medicine in Madras and England. After studying medicine in Madras, she went to England and received a Triple degree (medicine, surgery, midwifery) in 1892. Dr. Miss Anne Walke - LM & S was the first Indian woman to qualify from an Indian medical university. She was a Goan and born in Bombay. She joined Grant Medical College in 1883, and qualified in 1888. She worked at the Cama Hospital.

It was during the First World War that women's education received a great incentive. The Lady Hardinge Medical College, a residential college exclusively for women students was started in Delhi. It was then, that girls from conservative background also embarked on a medical career. In the Second World War, medical women were accepted in the Defence Services and even sent to Base Hospitals. Gradually, women doctors started combining their career with marriage and raising children as other specialties developed which gave them time to do both. Very few women reached the highest level in the profession, and most important positions were usually held by men. It is in the last 3 decades that medical women have grown and reached a status equal to men. Women doctors have come a long way – in a survey done in U.K. a few years ago, it was seen that the young Indian lady doctor was the most popular among the British population, so, cheers to Indian Women Doctors.

SKIN CARE: STAY FOREVER YOUNG

Dr. Malavika Kohli

Skin care today is beyond the traditional recipes. An increasing number of youth and mature adults are opting for techniques for skin care and prevention of skin ageing. Ageing is an inevitable, gradual alteration in the structure and composition of various components of the skin.

The following are the various types of ageing:
1. Chronological
2. Sun induced
3. Hormonal
4. Mechanical

- The various factors that influence skin ageing are age, environmental, lifestyle, smoking, alcohol and stress.

Changes in the physiological appearance over the years:
- In the 20s, the skin is soft, supple and radiant.
- In the 30s, it starts getting dry with appearance of fine lines, wrinkles and decrease in radiance.
- 40s and beyond, experience further dryness and dehydration and worsening of wrinkles due to loss of skin elasticity and muscle tone. Many also experience pigmentation as well.

How to fight skin ageing?

- Lifestyle changes are key.
- A good, balanced diet with the right amount of exercise lays the foundation for healthy, glowing skin.
- Avoidance of vices like smoking, alcohol and drugs are very important for preventing premature skin ageing.
- Sun and smoking are independent factors influencing skin ageing. The sun causes ultraviolet A induced damage which results in uneven skin tone, pigmentation and fine lines. Thus, individuals living in tropical countries are more prone to sun induced damage.
- Smoking causes excess production of free radicals and oxidants that disrupt the metalloproteinases which are an integral part of collagen. Thus, smoking causes collagen disruption and hence, wrinkling and sagging.

The better way to fight skin ageing is to prevent it

- Establish a daily skin routine which aims at protection of skin against the above factors and also use of anti
ageing products at appropriate milestones to stay ahead of the curve. 
Thus, to truly commence the fight against ageing
• In your 20s, start protecting your skin and establish a daily skincare regimen.
• In your 30s and 40s, improve and enhance your skin care according to specific needs and also start using corrective products for existing conditions.

A good routine at any time will include
• Cleansing with a good cleanser
• Moisturising to restore and keep barrier intact
• And protection with a good sunscreen to prevent sun induced damages.

The anti ageing agents used in most products are alpha and beta hydroxy acids, retinol and tretinoin, Vitamins A,C,E, Q-10 factor, plant extracts and ceramides. These products can be used in combination to achieve best results.

### Treatments and procedures that can aid in turning back the clock

1. **Chemical Peels:**
Chemicals like glycolic acid, salicylic acid, trichloroacetic acid and phenol in combination with many other brightening and lightening agents are used for conditions like melasma, post inflammatory hyperpigmentation and freckles; they can also be used for treating fine lines and wrinkles, for glow and improvement of texture as well as dilated pores.

2. **Photofacials:**
Here pulses of light are used to penetrate the skin to restore a youthful appearance. It improves fine lines and wrinkles, freckles and irregular pigmentation. It also clears broken skin capillaries and evens the overall skin texture.

3. **Facelift:**
Botox, fillers and threads can be used alone and in combination with each other for facelifts.

4. **Fillers:**
These are hyaluronic acid products that are injected into deep wrinkles, nasolabial folds, lips and lip lines. It can safely be repeated every 6 months to a year depending on the material.

5. **Botox:**
This is botulinum toxin type A which is injected into muscles responsible for facial expression like crow’s feet, frown lines and forehead lines and neck bands.

It is very effective in erasing lines and wrinkles and correcting facial defects. Since this is temporary, the procedure has to be repeated around every 6 months. Its advantages are that it has minimal to no side effects with no downtime. 
Can be performed in routine clinic setting.
Adresses a variety of problems and high patient satisfaction.

6. **Skin resurfacing procedures are revitalising techniques involving the removal of the damaged top layer of skin and its replacement by fresh skin tissue. These are used to slow down skin ageing and prevent wrinkles.**

• Lights and radio frequency can be done for evening out skin texture and tone and reducing fine lines and wrinkles.
• Mesotherapy uses microneedling techniques that infuse brightening and lightening agents to improve pigmentation and even out texture.
• Platelet Rich Plasma or PRP, also known as vampire facials uses patient’s own blood from which plasma is separated and injected into the skin. This plasma is rich in growth factors which aid in upregulating cellular metabolism of skin cells and is used for skin for rejuvenation, pigmentation and scar resurfacing and to even out skin tone and texture.

*Dr. Malavika Kohli,
Consultant Dermatologist and Aesthetic Dermatologist
Jasiok Hospital & Research Centre

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### HAIR CARE

In cases of excess hairfall, check for levels of iron (serum ferritin), vitamins D3 and B12, calcium as well as thyroid levels. Correction of these levels must be done.

- Avoid hot showers and overzealous oil massaging if one has dandruff or an itchy, scaly scalp.
- Persistent dandruff may be due to other scalp disorders such as psoriasis, seborrheic dermatitis or scalp folliculitis. Treatment of specific conditions will reduce scaling and hairloss.
- Newer genre of sulphate and paraben free shampoos and conditioners must be used to reduce scalp irritation and inflammation.
- Avoid excessive heat based hair treatments like ironing and blow drying which destroy the hair cuticle and lead
to weathering and roughness of hair. Excessive use of chemicals for straightening also should be avoided. Newer cysteine based treatments for easing out the frizz can be tried as they leave protective protein coating on the scalp rather than destroying the bonds.

- Leave-in conditioners or smoothing serums can be used to reduce frizz and dryness.
- Cold compresses of coconut oil can be used on the scalp and hair before a hair wash. It has soothing and anti-inflammatory benefits over other oils.
- A balanced diet with adequate proteins which includes nuts, eggs, lentils, green leafy vegetables and fruits; supplies nutrients for good hair and skin.
- There have been many advances in the treatment of male and female pattern baldness in the form of PRP (platelet rich plasma) and Mesotherapy. Topical applications with growth peptides and botanicals are also widely being used.

*Dr. Malavika Kohli, Consultant Dermatologist and Aesthetic Dermatologist, Jaslok Hospital & Research Centre

MENTAL WELL-BEING: THE KEY TO HAPPINESS

Dr. Shamsah Sonawalla

Mental well-being is characterized by a sense of being in control of one’s emotions and behavior, a sense of confidence and high self-esteem, a sense of happiness and contentment, a sense of meaning and purpose in life, the ability to have fulfilling relationships and the ability to cope with life’s stresses and bounce back from adversity. Mental well-being strongly impacts one’s physical health and overall sense of well-being.

As women, we have an inclination to put everyone else first before ourselves. However, it is important to look after ourselves first, to ‘put on our oxygen masks first’; this is not only in our own interest but also in the interest of those whom we care for and those around us.

- Look after yourself.
- Get enough sleep: most people need seven to eight hours of sleep.
- Eat healthy, focus on balanced nutrition.
- Exercise daily to build stamina. Aerobic exercise is important, combined with stretching and weight training.
- Get some sunlight daily. This impacts mood and overall health.
- Limit the use of alcohol; avoid smoking, drugs and other addictions.
- Practice a relaxing yet energizing activity such as yoga, meditation, etc.
- Engage in a creative activity you like: painting, writing, gardening, dance, music, etc.
- Gratitude and appreciation: Make time to think about the things you are grateful for. Enjoy the sunset, practise deep breathing, take a moment to pay attention to what is good and positive in your life.

*Dr. Shamsah Sonawalla, Associate Director, Psychiatry Research & Consultant Psychiatrist, Jaslok Hospital & Research Centre
PCOS is a gynecological hormonal disorder, which affects 8-10% of women in their reproductive age. It affects women of all ages, from puberty to menopause. The presenting complaints may differ from cosmetic issues like facial hair and acne, irregular periods and inability to conceive, and chronic diseases like diabetes mellitus, high blood pressure, high cholesterol, and uterine cancer. 80% of girls or women are obese and quite a few have excessive pigmentation around the nape of their necks, underarms and groins.

PCOS is one of the prominent causes of infertility, in which ovulation does not occur or occurs irregularly. It is possible to assist infertile patients with various forms of medications which help ovulation and various other infertility treatments. As a matter of fact at our Centre, we see a maximum of infertile women with PCOS.

As of today, the cause for PCOS to occur is not known, but a lot of research is ongoing and hopefully we should have an answer in the near future. But we do know that PCOS is a hormonal disorder which is genetically determined, with insulin resistance (relative lack of insulin hormone leading to diabetes) as the root cause. It occurs due to an interaction of genetic and environmental factors such as obesity. It is a life-long condition which cannot be completely cured but can definitely be kept under check. PCOS is also accompanied by raised androgen levels i.e. excessive male hormone leading to acne, facial hair and loss of scalp hair.

- **Lifestyle modification** is the first line treatment for PCOS. A low calorie diet and regular exercise is the key to weight loss. Weight loss can improve fertility, regularize periods, reduce the insulin resistance and lower androgen levels. A weight control program with regular aerobic exercises, preferably under a nutritionist’s guidance, is highly recommended.

- **Birth Control Pills**: These can be used in women not keen to get pregnant. The pills regulate the periods and correct excessive hair growth and acne by reducing the male hormone. By ensuring a regular period, they also decrease the chances of womb cancer. These can be used long term if done under medical supervision. Newer birth control pills are extremely effective and are low dose, hence, less likely to have side effects. Needless to say, they are not an option for women wanting to get pregnant.

- **Insulin Sensitizing Drugs**: Drugs that improve insulin resistance and lower insulin levels include metformin. Metformin promotes fertility and regularizes periods, promotes weight loss with exercise, and improves insulin sensitivity. This can be also given to women desirous of childbearing. There are studies which conclude its safety during pregnancy. Metformin, if used during pregnancy, prevents miscarriages, gestational diabetes and high blood pressure during pregnancy in such women. Metformin is also indicated if the lady’s blood sugar and insulin are high, or if she is pre-diabetic or already a diabetic.

- **Ovulation inducing drugs**: These are the medications that help infertile women ovulate. These include tablets like Clomiphene and Letrozole, and hormonal injections like FSH & LH. These medicines are given from the 2nd/3rd day of the period. After taking these medicines, ovulation is usually monitored by serial ultrasound to assess the follicular growth and to avoid problems like too many eggs getting mature (Hyperstimulation). Some patients may require assisted reproduction such as IVF or ICSI, if they do not get pregnant with simple ovulation induction and intrauterine insemination.

- **Anti-male hormones drugs/Antiandrogens**: These are used when the androgen levels are high. They include oral medicines like Spironolactone & Flutamide or creams like Eflornithine. Effective contraception is required when using any of these drugs as they can affect the male fetus if a woman gets pregnant whilst on these treatments. These drugs are not used long term.

How do we diagnose PCOS? This is done by a detailed history including that of periods, weight gain, hair growth, acne, hairloss on the scalp, and pigmentation, a detailed examination, blood investigations and ultrasound. The treatment is tailored based on the lady’s symptoms, test results and the desire to get pregnant, or not.

As already said, PCOS is a lifelong condition, which can have serious cardiovascular and other consequences, if not kept under check. It is therefore important that the PCOS patient should see her doctor at least once in 6 months, so that her treatment can be optimized and any necessary referrals made. The management may be multidisciplinary, involving the gynaecologist.
Pregnancy is a very special time for both the partners. Knowing that you are getting a new person into this world is exciting but there are several nuances about pregnancy that can take you by surprise, especially if you are unprepared. Know what to expect and being informed, helps enjoy this period, with all its ups and downs.

Preparing for pregnancy – before conceiving

**HEALTH**
- A HEALTH CHECK-UP, though not essential, can be useful. It can tell you if you have any problems that can affect your pregnancy or your baby like blood pressure, diabetes, thyroid diseases, low haemoglobin, Polycystic Ovarian Syndrome and give you a chance to fix them in time.
- Take steps to reduce chances of birth defects by starting FOLIC ACID and stopping some prescription MEDICINES like acne medicine, blood pressure medicines amongst others that are detrimental to the baby’s health and may need to be stopped months before you conceive. Check with your doctor.

**LIFESTYLE**
- PHYSICAL EXERCISE is a one of the best investments for pregnancy when your body is going to take up the massive task of creating another human being. Be it yoga, zumba or running, being regular is the key. Strong back, stomach & leg muscles will help your body cope better with demands of pregnancy.
- STRESS can be a show stopper. It can make conceiving difficult. Figure out what is causing it – and also identify stress busters – from painting to listening to music or anything that works for you.
- Avoid SMOKING, ALCOHOL and EXPOSURE TO HAZARDS like radiation, paints or chemicals.

**DIET**
- A well balanced diet with dairy, soya products, dals, fish and chicken provides a rich source of nutrition even before pregnancy for good foetal growth.

**PLANNING**
- Plan out your finances, vacation and health before embarking on pregnancy.

The pregnancy: now that your test has come positive, its time T to look at what’s going to happen next.....

**First trimester**

**HEALTH**
- Start FOLIC ACID if not already started. It reduces the baby’s risk of being born with spina bifida or other neural tube defects.
- Most MEDICINES are a big ‘no-no’ during these nine months (40 weeks) unless cleared by your healthcare provider.
- Avoid all sorts of X-RAYS AND RADIATION which can cause fetal defects.
- SPOTTING from the vagina during early pregnancy can be normal, but it is better to inform your doctor.
**BLEEDING OR ABDOMINAL PAIN** are to be taken seriously and reported to your doctor immediately as it can indicate miscarriage or ectopic (tubal) pregnancy.

Start moisturizing your skin and preparing it for ‘the bump’ if you are anxious about STRETCH MARKS.

Time for NT Scan and Double marker test.

**LIFESTYLE**

- Feeling **FATIGUED** is common since your body is working very hard to adapt to changes and demands of the pregnancy. Sneak in naps if possible to cope with this.

- **URGE TO PEE** frequently can really be annoying, but it is normal as your growing uterus presses against the bladder.

- Pray that you don’t experience "MORNING SICKNESS" which is the dirty nauseous feeling sometimes accompanied by vomiting. Unfortunately, it is not restricted to mornings and can happen any time of the day. Ginger is a natural remedy and eating carbohydrates help reducing this feeling. It is worse when the stomach is empty or over stuffed, so it is important to have small meals throughout the day.

**DIET**

- Include **OMEGA - 3 FATTY ACIDS** in your diet to help baby’s brain development. Common vegetarian sources are walnuts, soy milk or tofu.

- Include a lot of **FRUIT AND VEGETABLE** in your diet to avoid constipation.

- Foods to **AVOID** – soft cheese, caffeinated products, unpasteurized milk, papaya specially the raw one, pineapple, food containing MSG.

**PLANNING**

- Decide your **OBSTETRICIAN** and place of delivery wisely. It is important to be comfortable with and have full faith in your chosen person as he/she is going to be your guide through the nine months.

- Keep a **DIARY** for all your questions, however silly! ‘Pregnancy brain’ will not let you remember them all.

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**Second trimester**

**HEALTH**

- Start taking Calcium, Vitamins & Iron **SUPPLEMENTS** if you have not started already.

- During this trimester you will have your **ANOMALY SCAN AND TRIPLE MARKER TEST** done which will tell you about the growth and development of the fetus and also indicate if there are any abnormalities. The doctor will also look for the cervical length and position of the placenta and advice extra rest and care if the cervical length is short or placenta position is low.

- Your **HAIR** might appear thick and lush or dull and there might be changes in the colour and texture of your **SKIN**. This is all the result of the raging pregnancy hormones.

- 4-D SCAN can be done at this time. It is mainly experience and helps you see the baby more clearly and helps you connect with the baby. Definitely recommended in the presence of both partners. Your doctor might suggest it specially if needed.

- Two **TETANUS (TT) SHOTS** are given to prevent the risk of tetanus to both you and your baby.

- You will start feeling the **BABY MOVEMENTS** and occasionally see a little knobby limb popping out towards the end of this trimester. “It’s Alive And Kicking!”

**LIFESTYLE**

- **SEX** is generally safe during pregnancy unless advised otherwise by your doctor.

- **TRAVEL** (with the consent of your doctor)! Most airlines allow till 30 weeks with a medical certificate. This is the time to go on your ‘babymoon’ and enjoy quality time with your partner.

- **SLEEPLESSNESS** often becomes a problem as the pregnancy progresses. It is difficult
to find a good position to sleep and frequent trips to the loo don’t help. Sleeping on the left side with feet propped up can help. There are pregnancy pillows available to provide additional support.

- Your jeans will get tighter and your favourite tops might not fit. It is advisable to invest in a few comfortable MATERNITY CLOTHES for the rest of the pregnancy.

- Regular gentle EXERCISE like swimming, walking or pregnancy yoga can get you prepared for the birth of your baby. It is advisable to check with your doctor.

- There are pregnancy massage therapists who will help to relax you physically & mentally which will help you get good rest. Worth a try. Baby music, religious chants (garb sanskar) have a relaxing effect & sends the right ‘vibrations’ to the baby inside.

**DIET**

- Eating small, regular meals can help reduce the HEARTBURN or acidity which starts in this trimester. Your doctor will prescribe an antacid if it is really bothering you.

- Even though you are producing a whole new human being, DON’T EAT FOR TWO. The little one does not need a lot of calories. Although your nausea may reduce, don’t make for the food not eaten.

- Carrying nuts, dried fruits, fresh fruits, granola bars and a bottle of water can come in handy at times of sudden hunger and prevent you from eating junk.

**PLANNING**

- Select your PEDIATRICIAN wisely. He/She is going to be on your speed dial for many a year to come. It is important that he/she be there at the time of birth of your baby.

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### Third trimester

**HEALTH**

- SWOLLEN FEET and ankle are pretty common and some people also suffer from varicose veins due to the weight of the uterus. It is something to worry if it comes with other symptoms like blurry vision or pain. Inform your doctor immediately.

- KICK COUNTING is important. Talk to your doctor about it.

- You will know it is time for delivery either when LABOUR PAINS start or if your WATER BREAKS.

- Based on what the doctor decides, you will either have Normal delivery or a C-section. EPIDURAL ANESTHESIA is an option which you should discuss with your doctor beforehand.

**LIFESTYLE**

- If you suffered from MORNING SICKNESS in the first trimester, chances are that it will be back. Be prepared.

- Your EMOTIONS are going to be all over the place due to pregnancy hormones and the upcoming responsibilities. Discuss with your partner and family to relieve some of the fears.

- LAMAZE CLASSES can help you and the to-be father prepare for labour, delivery and breastfeeding.

- DRIVING A CAR is usually permitted with the correct way of buckling the seat belt. Check online for a video.

- Your family might insist on consuming ghee and all things laced with ghee (TRADITIONAL RECIPES). It is all ok as long as it is in moderation.

**DIET**

- You must PREPARE FOR THE BABY’S ARRIVAL by organising a cot/bassinet and getting all the little things ready like diapers, feeding pillows, bibs, swaddle cloths, etc. etc. etc.

**PLANNING**

- PACK YOUR HOSPITAL BAG. It is good to check with the hospital on what will be provided and what is expected to be carried for the baby.
Holding the baby in your hand is the most exhilarating feeling ever. However, it comes with responsibility. Choose wisely and enjoy parenthood.

### Post Partum: After Delivery

| HEALTH | • RECOVERY from Labour or C-section is different, each takes its own time and has its own issues – episiotomy versus scar healing.  
• Few women suffer from POST PARTUM BLUES or depression as it is difficult to fathom the change that will come with the new one’s arrival. It is better to identify it early and seek help promptly. |
| LIFESTYLE | • Lot of DECISIONS that you will have to make which will decide your life for the next few months.  
• Breast feed vs formula  
• Nursing vs expressing  
• Bottle vs bondula  
• Cloth nappies vs cloth diapers vs disposable diapers  
There is no right or wrong. It is what works for you. |
| DIET | • Focus on a good LACTATION DIET which includes a lot of liquids, milk and other traditional recipes of mukhwaas, sattavarex powder. What you eat will reflect in your baby... for example, eat lots of chick peas & your baby will pass lots of gas..... It’s true!! |
| PLANNING | • Plan on RESUMING WORK to balance your mental state with your babies needs. You will feel guilty when you leave your baby; so prepare yourself.  
• Some preschools and SCHOOLS expect you to register your baby’s name at an early age. It is recommended that you find out about these details for your preferred institutions to avoid disappointment. |

Nothing can make you totally prepared for pregnancy and childbirth; you will learn most things on the way. This is my version of the ‘Hitch-hikers Guide to Pregnancy’... Make sure you enjoy the expected and the unexpected, while you are expecting...

### Sonography in Women

Dr. G.N. Mansukhani

Sound waves whose frequencies are so high that they are not audible are referred to as ultrasonic.

The discovery of ultrasound in the 1960s, made a great impact on Obstetrics. This has become a very useful tool for pregnant women since the 1970s and has been responsible for improving maternity care and baby outcome as the years have gone by.

It has then been used in gynaecology and also in other
fields of medicine as it does not cause any radiation.

- In obstetrics, in early pregnancy it is used to confirm an intrauterine pregnancy and to rule out an ectopic pregnancy - pregnancy outside the uterus commonly seen in the fallopian tubes.
- It has been used to check gestational age in irregular menstrual cycles so as to date the pregnancy. Then a NT scan is done at 11 weeks to confirm that the foetus is normal, and that it has not stopped growing which is commonly known as ‘missed abortion’. Also twin pregnancy can be diagnosed early.
- The mother is next screened at 17 weeks to confirm that foetal organs are all normal, as with the recent technology most organs can be clearly seen on ultrasound. If there is any doubt, and an abnormal pregnancy is detected then the water around the baby can be tapped safely under ultrasound guidance known as “amniocentesis”.
- The baby is scanned again at about 7 months to check that the baby is growing well and that it is not too large or too small for its gestational age. Also the placenta (afterbirth) can be localised so that one can warn the mother (if it is low-lying), that she can bleed and may require Caesarean Section.
- Near term an ultrasound scan is necessary to check the blood supply to the baby (known as Doppler scan) whereby the obstetrician knows that he has to be very vigilant if the blood supply is reduced.

Hence, every pregnancy should be screened by ultrasound scan so that the mother may have a successful outcome and safe delivery.
- Ultrasound in gynaecology is useful in young girls particularly those who have not started menstruating at the usual age between 12 to 15 years.
- In adult women it can be used for diagnosing the cause of heavy bleeding if there is any pathology like polyps or fibroid.
- In women who have difficulty in conceiving it is useful for checking any tumour in the uterus (fibroid) or in the ovary.
- Ultrasound can also be used to detect any infection in the pelvis.

In the elderly age group this investigation is useful for picking up malignant tumour in the ovary and in the uterus or in other parts of the pelvis. It is also useful tool for diagnosis of tuberculosis in the abdomen.

Ultrasound is a simple procedure, it is painless and also does not cause any radiation hazard, hence, it is a safe and useful technology not only for the patient but also for the doctors who are performing the procedure.

*Dr. G.N. Mansukhani, Director - Department of ObGyn Jaslok Hospital & Research Centre

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**INFECTIONS IN WOMEN**

Dr. Danny Laliwala

Most women have had vaginal infections now and then.

One is distracted by it and does not feel right down there; one wants to do something to make it stop.

What causes these infections?

It can be caused by bacteria, fungi, viruses, chemicals in soaps or even your clothing.

### Prevention of infections

- Keep the area reasonably clean and dry
- Avoid excessive douching as it may wash out the useful bacteria from the tract
- Avoid nylon underwear and tight jeans
- Eat a well balanced diet and increase yoghurt in your diet
- Use condoms
- Check for diabetes
- Decrease sugar in diet
- Sleep well
- Use a soft liquid soap for your private parts

### Types of vaginal infections

- Bacterial
- Candidiasis (fungal)
- Chlamydial
- Trichomoniasis
- Combination of above

### Normal discharge

It will be clear or slightly cloudy, but non smelling

- Fungal: curdy white discharge
- Bacterial: fishy smell
- Trichonomial: greenish discharge

*Dr. Danny Laliwala, Hon. Consultant, Dept of ObGyn Jaslok Hospital & Research Centre*
**Why contraception?**

We all know that the TAJ MAHAL was built by Shah Jahan in memory of his Begum (wife) Mumtaz Mahal as an eternal monument of Love.

But did you know how Mumtaz Mahal died?

She died while giving birth to her fourteenth child from massive bleeding during childbirth (a condition medically called POST PARTUM HAEMORRHAGE).

**Choice of contraception**

There is wide range of choice of different methods of contraception available for Indian Women. What suits one, will depend on a number of factors like age, medical conditions, family history, medications and personal habits.

A few examples

- **Male Condoms**
  - Acts as a barrier and stops the sperm from reaching the egg
  - 98% effective if used appropriately
  - Only method to protect a woman from sexually transmitted infections

- **Combined Hormonal Pills**
  - 99% effective
  - Prevents ovulation temporarily
  - Used with caution in smokers and those with migraine and other medical conditions

- **Contraceptive Ring**
  - 99% effective
  - Contains hormones for contraception in form of a ring to be inserted internally
  - Advantage of using once in 3 weeks instead of daily use

- **Copper Intrauterine Device**
  - Best for those having at least one child
  - 97% effective
  - Valid for use for 3, 5 and 10 years

- **Contraceptive Injections**
  - To be taken once in 3 months
  - More than 99% effective
  - Takes longer for fertility to come back i.e. one gets pregnant about 6 to 9 months after stopping the injections

- **Hormonal Intrauterine Devices**
  - Effective for 5 years
  - More than 99% effective
  - Excellent for those who have heavy bleeding

**Cracking some common myths**

1. **Breastfeeding prevents pregnancy**
   Exclusive breastfeeding does suppress ovulation and thus prevent pregnancy but cannot be relied on as a sole method. There may be sporadic ovulation and an accidental pregnancy even while breastfeeding.

2. **Birth control pills affect future fertility**
   Pills contain natural hormones of your body which are given externally. It is highly unlikely to have an effect on future fertility: pills neither enhance nor decrease one’s fertility potential.

3. **I can take an emergency contraception, (I-pill) instead of regular oral contraception pills every time I have unprotected sex?**
   Emergency pills are for emergency exposure when one has been accidentally exposed unprotected at an unsafe period and there is a high chance of pregnancy. It cannot replace a regular contraception. Too frequent use of emergency contraception can lead to menstrual pattern disturbances.

4. **Copper T’s and other IUCDs can cause infections, back pain and cancer**
   IUCD insertion under hygienic and safe conditions does not cause infections in a healthy uninfected womb. IUCDs do not cause back pain or cancer.

5. **Splashing water or taking a thorough shower soon after sex washes the sperms away and prevents pregnancy**
   Splashing water/urinating/douching oneself does not prevent pregnancy. Sperms can swim against the gradient and reach the egg to fertilize it in spite of all the violent mechanical methods of prevention.

6. **All birth control pills make you gain weight**
   Hormonal pills can cause water retention but the modern
day pills with newer types of hormones at very low doses are highly unlikely to cause weight gain.

7. Using 2 condoms at a time double the protection

The friction of one condom over the other can cause minute breakages in the condoms and hence, spillage of the man fluid and ultimately failure of contraception resulting in pregnancy.

Can my contraceptive method be useful in any other way?

- Condoms protect one from sexually transmitted infections
- Pills reduce pain and bleeding during periods
- Pills reduce risk of ovarian and uterine cancer
- Some pills help in reducing acne and facial hair growth
- Hormonal IUCDs reduce heavy bleeding during periods

*Dr. Sudesna Roy, Hon Consultant & Co-ordinator, Dept of OB Gyn, Jaslok Hospital & Research Centre

AUTOIMMUNE ABERRATIONS IN WOMEN

**Straight from the Rheumatology Clinic**

**Dr. Prakash Pispati**

FACTS as they are: Seven out of every ten patients at our clinic are women. The other day a friend inviting me to dinner said he would fetch me from my clinic; as I hopped into his car he asked naively, “Doc, at your waiting room with all women are you a *Rheumatologist* or a *Gynaecologist*?”

Indeed, from menarche to menopause in precious child bearing age, disturbing, at times disruptive autoimmune disorders are not infrequent. What are autoimmune disorders? In essence, the normal functioning human physiology forgets teleology (innate wisdom of the body). So, instead of producing antibodies to protect against hostile germs (antigens), the body mistakenly produces antibodies against itself, i.e. autoantibodies which have no business to be there. Why so, and how so?

The immune system (i.e. the defense system of the body) is essentially protective to detect entry of harmful antigens (e.g. hostile germs), at entry point, if they get in to destroy them at least contain them and at all times prevent production of autoantibodies which can be self damaging. It’s like trying to prevent sedition, revolt or a rebellion in a nation.

In child bearing age such autoimmune aberrations do occur. The commonest disease manifestation is Arthritis.... 108 of them. Of the so many, the commonest are Rheumatoid arthritis (multiple joint pain, early morning stiffness with debility, deformities mainly of extremities, even reduction of life span). The detectable antibody is Rheumatoid Factor (‘RA test’), and now Anti CCP as well.

A dangerous autoimmune disease afflicting young girls 20-35 years is Lupus (SLE: systematic lupus erythematosus), joint pain, alopecia (hair loss), butterfly rash on the face, mouth ulcers, skin lesions on hands and feet, and further afflicting vital organs viz. the kidney (Lupus Nephritis), the brain (NeuroPsychiatric Lupus) and blood vessels (vasculitis). The prime detectable autoantibody: Anti Nuclear Antibody (ANA), and others.

Professor Graham Hughes in London observed that many such Lupus patients reported miscarriages, deep vein thrombosis (DVT), headaches, memory loss, and even strokes in young women (‘sticky blood disease’). Such bizarre multisystem manifestations were associated with complex circulating autoantibodies. He cleverly put everything together painstakingly and described Antiphospholipid Syndrome (APS), now also named after him, the Hughes Syndrome. (see pic. Box)

**Antiphospholipid: Hughes Syndrome**

Main clinical features

- Headaches
- Memory loss
- Recurrent pregnancy loss
- Deep vein thrombosis “DVT”

**Where are these autoantibodies produced?** Though complex, specialized white blood cells, the T-Cells receive signals from invading culprit antigens. Rather than arrest them the deficient, defective T-Cells wrongly signal the next in sequence B-Cells to produce damaging autoantibodies.

**What is the treatment?** Highly specialized, personalized diagnosis dependent. In general, simple pain-killers (NSAIDs) won’t work, corticosteroids (gluco corticoids) are most useful even if frequently misused inducing
avoidable side-effects; immunomodulating drugs like methotrexate, cyclophosphamide, cytotoxic drugs (DMARDs). And now to the rescue for such hapless young women in child-bearing age are the new technology inventions: The Biologicals.

These biologicals prescribed carefully by us over ten years have yielded dramatic, salutary outcome, inducing rapid remission, preventing deformities, restoring normalcy and even facilitating child-bearing function.

Do these Biologicals have side-effects? If used judiciously under strict protocol, hardly any in experienced hands. Indeed rheumatoid arthritis patients often can walk quickly 'without a stick', young Lupus patients with their lives in danger now may even bear children. Are these Biologicals costly? Yes, but they are cost-effective. Now the good news! We have Biosimilars which are made in India, call them 'mimics' or 'copy cats' but they are effective at half the cost.

With greater awareness amongst doctors and patients, better diagnostic tests for early detection and new timely treatments, we Rheumatologists are managing autoimmune aberrations in women who now live fairly normal critical phases of their lives.

Much of Rheumatology today is in tandem with Immunology. In the conquest of autoimmune diseases in women, the modern mantra:

Rheumatology + Immunology = RheumaNology.

*Dr. Prakash Pispal,
Director of Rheumatology
Jaslok Hospital & Research Centre

MENOPAUSE - A NEW BEGINNING

Dr. Sudestha Ray

What is menopause?
Menopause marks the end of the menstrual cycles in a woman. A woman is said to have attained menopause when it has been 12 months since the last menstrual period.

Symptoms of menopause

- **Hot Flushes** - Transient periods of feeling of feeling intensely warm and flushed in the upper arms and face which may be followed by profuse sweating. Hot flushes can disturb sleep and cause fatigue and irritability with negative impact on routine daily efficiency.
- **Mood changes** - High anxiety and depressive symptoms are more so in women who have low baseline anxiety levels.
- **Menstrual migraines and breast soreness**
- **Vague muscle and joint pains**
- **Palpitations and disturbed sleep**
- **Symptoms like vaginal dryness, soreness, itchy vulva, recurrent burning urination and loss of bladder control comes many years after menopause.**

The 2 most affected organs after menopause

**BONES**
- Bones become thinner with menopause
- The bone resorption rate is higher, i.e. the rate of bone loss is higher than the rate of bone replacement.
- Initially the Bone Mineral density becomes low – a condition called Osteopenia. Later on the bones become thin, weak and break off easily – a condition called osteoporosis. Osteoporosis can be prevented. Sports, weight bearing exercise and physical activity are statistically and significantly shown to have beneficial effects on bone mineral density.

**HEART**
- The risk of an ischemic heart disease equals to that of a man which is usually half of that of men before menopause.

Tackling menopausal issues

**HOT Flushes**
- Layered clothing can maintain core temperature and reduce hot flushes.
- Avoiding spicy diet, excess caffeine and alcohol can be beneficial.
- Physical activity and paced breathing may be of additional help.
- Estrogens even in doses as low as 0.03mg/day is found to be extremely effective if pharmacological intervention is needed.
- Newer antidepressants/SSRIs are also beneficial.

**SEXUAL function**
- Counseling
- Balanced Diet and Physical Activity
- Intravaginal DHEA holds promise in future
URINARY SYMPTOMS AND VAGINAL DRYNESS
- Over the counter lubricants and moisturizers
- Topical estrogen cream under strict medical guidance

Long term prevention of osteoporosis and fracture

- Calcium supplementation of 1200mg/day
- Daily Vit D of 600IU
- Weight bearing Exercises
- Glucocorticoid use
- Rheumatoid arthritis
- Secondary osteoporosis
- Alcohol 3 units or more per day
- Low Femoral neck bone mineral density
- Medications used are Bisphosphonates, SERMs, Estrogen, calcitonin, RANK Ligand Inhibitor and parathyroid hormone.

Medications are needed for those with a high risk of fracture like:
- Tall, thin woman
- Previous fracture
- Parent with fractured hip
- Current smoking

<<Dr. Sudeshna Ray, Hon Consultant & Co-ordinator, Dept of ObGyn
Jaslok Hospital & Research Centre

BASIC DIETARY GUIDELINES FOR MENOPAUSE Dr. Nidhi Shah & Dr. Naima Afreen

GET ENOUGH CALCIUM
Eat and drink two to four servings of dairy products and calcium-rich foods a day. Aim to get 1,200 milligrams per day.

PUMP UP YOUR IRON
Eat at least three servings of iron-rich foods a day. Iron is found in lean red meat, poultry, fish, eggs, leafy green vegetables, nuts, and enriched grain products. The recommended dietary allowance for iron in older women is 8 milligrams a day.

GET ENOUGH FIBER
Help yourself to foods high in fiber, such as whole-grain breads, cereals, pasta, rice, fresh fruits, and vegetables. Most adult women should get about 21 grams of fiber a day.

EAT FRUITS AND VEGETABLES
Have at least 1 1/2 cups of fruit and 2 cups of vegetables each day.

READ LABELS
Use the package label information to help yourself make the best choices for a healthy lifestyle. Drink plenty of water. As a general rule, drink eight glasses of water every day, this fulfills the daily requirement for most healthy adults.

MAINTAIN HEALTHY WEIGHT
If you’re overweight, cut down on portion sizes and eat fewer foods that are high in fat. Don’t skip meals, though. A registered dietitian or your doctor can help you figure out your ideal body weight.

CUT BACK ON HIGH-FAT FOODS
Fat should provide 25% to 35% or less of your total daily calories. Also, limit saturated fat to less than 7% of your total daily calories. Saturated fat raises cholesterol and boosts your risk for heart disease. It’s found in fatty meats, whole milk, ice cream, and cheese.

Limit cholesterol to 300 milligrams or less per day. And watch out for trans fats, found in vegetable oils, many baked goods, and some margarine. Trans fat also raises cholesterol and increases your risk for heart disease.

USE SUGAR AND SALT IN MODERATION
Too much sodium in the diet is linked to high blood pressure. Also, go easy on smoked, salt-cured, and charbroiled foods - these foods have high levels of nitrates, which have been linked to cancer.

Limit alcohol to one or fewer drinks a day.

VITAMIN D
Your body uses vitamin D to absorb calcium. People ages 51 to 70 should get 600 IU each day. Those over 70 should get 800 IU daily. More than 4,000 IU of vitamin D each day is not recommended, because it may harm the kidneys and weaken bones.

*Dr. Nidhi Shah, Clinical Associate & Dr. Naima Afreen, Final Year DNB Student
Dept. of ObGyn
Jaslok Hospital & Research Centre
Women and men are different only by a single chromosome - 46XX for women and 46XY for men. This single chromosome influences the physiological, physiological behavioural characteristics of both genders. There are differences in the occurrence, presentation, course and treatment of several cardiovascular diseases between the genders. This single change sometimes protects women and at other times enhances the susceptibility of women to heart disease.

**STARTLING STATISTICS! ARE WOMEN REALLY AWARE?**

Majority of women are afraid of breast cancer! You hear several female celebrities propagating the early diagnosis of breast cancer. Some even get preventive surgery for it! However, you rarely hear of an actress promoting prevention of heart attacks in women...

The fact is that the leading cause of death in women is Cardiovascular Disease (CVD). One third of all deaths in women are due to cardiovascular diseases.

Among heart diseases, Coronary Artery disease (including Angina and Heart Attacks) accounts for half the deaths. In other words, one in every six women dies due to coronary artery disease.

There are several Myths that women have about CVD and their own risk to develop it. It’s about time women face reality...

<table>
<thead>
<tr>
<th>PERCEPTION</th>
<th>REALITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>BREAST CANCER IS THE REAL THREAT TO WOMEN; NOT</td>
<td>1 IN 3 WOMEN DIE OF HEART DISEASE; 1 IN 30</td>
</tr>
<tr>
<td>HEART DISEASE</td>
<td>WOMEN DIE OF BREAST CANCER PER YEAR</td>
</tr>
<tr>
<td>'I HAVE NO SYMPTOMS... HOW CAN I HAVE HEART</td>
<td>60% OF WOMEN WHO DIE OF A HEART ATTACK HAVE</td>
</tr>
<tr>
<td>DISEASE?'</td>
<td>NO PREVIOUS SYMPTOMS</td>
</tr>
<tr>
<td>HEART DISEASE IS INDICATED BY DEVELOPMENT OF</td>
<td>LESS THAN HALF OF WOMEN WITH HEART ATTACKS</td>
</tr>
<tr>
<td>SEVERE CHEST PAIN</td>
<td>PRESENT WITH CHEST PAIN</td>
</tr>
<tr>
<td>BREATHLESSNESS, NAUSEA, INDIGESTION DOES NOT</td>
<td>HALF THE WOMEN WITH HEART ATTACKS HAVE</td>
</tr>
<tr>
<td>MEAN HEART DISEASE</td>
<td>BREATHLESSNESS, NAUSEA, INDIGESTION, SHOULDER</td>
</tr>
<tr>
<td></td>
<td>PAIN, FATIGUE</td>
</tr>
<tr>
<td>HEART DISEASES DO NOT AFFECT WOMEN WHO ARE</td>
<td>EVEN A HEALTHY WOMAN CAN BE PRONE TO HEART</td>
</tr>
<tr>
<td>FIT</td>
<td>DISEASE IF SHE HAS A FAMILY HISTORY OF HEART</td>
</tr>
<tr>
<td>DISEASE</td>
<td></td>
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</tbody>
</table>

**Women and coronary artery disease risk factors**

**Risk factors**

Risk factors for coronary atherosclerosis are divided as shown in the Table 2 below, with similar influence on the risk in males and females.
The major difference in men and women is the earlier presentation of coronary artery disease in men by 8-10 years. However, women catch up post-menopause. This premenopausal protection is afforded by estrogen in women. Nevertheless, hormonal replacement therapy with estrogen post-menopause does not prevent cardiovascular disease.

### Table 2: Risk Factors for Coronary Atherosclerosis

<table>
<thead>
<tr>
<th>NON MODIFIABLE</th>
<th>MODIFIABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Smoking</td>
</tr>
<tr>
<td>Gender</td>
<td>Obesity</td>
</tr>
<tr>
<td>Family History*</td>
<td>Lack of Physical Activity</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>Diet (Lacking in Fruits and Vegetables)</td>
</tr>
<tr>
<td></td>
<td>Hypertension</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NEWER RISK FACTORS</th>
<th>Diabetes Mellitus</th>
</tr>
</thead>
<tbody>
<tr>
<td>C Reactive Protein</td>
<td>Hyperlipidemia</td>
</tr>
<tr>
<td>Lipoprotein (a)</td>
<td>Psychosocial Factors</td>
</tr>
<tr>
<td>Homocysteine</td>
<td></td>
</tr>
<tr>
<td>Small dense LDL</td>
<td></td>
</tr>
<tr>
<td>Cholesterol</td>
<td></td>
</tr>
<tr>
<td>Fibrinogen</td>
<td></td>
</tr>
</tbody>
</table>

*History of Heart disease in a first-degree relative: Male < 55 years, Female < 65 years

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### Startling Facts About Risk Factors for Coronary Atherosclerosis

#### SMOKING
Half of all heart attacks in women are attributed to smoking

#### HYPERTENSION
25% and 38% of hypertensive patients in rural and urban areas are actually treated for hypertension

Among those treated, only 10% and 20% of patients in rural and urban areas have their BP under control

#### DIABETES MELLITUS
Cardiovascular diseases are twice as common in women with diabetes as compared to those without diabetes

Diabetes increases the risk of cardiovascular disease 3-7 fold in women compared to 2-3 times in men

#### CHOLESTEROL & TRIGLYCERIDES
After menopause, the total cholesterol, LDL cholesterol and triglycerides increase by 10%. This leads to an increase in cardiovascular disease post-menopause

#### OBESITY
80% of Indian women are overweight (BMI > 23 kg/m2) and 66% of women are Obese (BMI > 25 kg/m2)

#### LACK OF EXERCISE
Healthy lifestyle including regular exercise, diet - fruit and vegetable intake and modest alcohol consumption provided stronger protection among women than among men

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### Unfortunate Differences in Presentation and Treatment of Women with Coronary Artery Disease

- Women may experience milder symptoms and often describe them differently.
- Women may more frequently experience Nonspecific Prodromal Symptoms, such as fatigue.
- Dyspnea, nausea and vomiting, indigestion, fatigue, sweating, and arm or shoulder pain as presenting symptoms in the absence of chest pain were all more frequent among women than among men.
- Women usually have a Delayed Presentation to the hospital compared to men.
- Women are more likely to be misdiagnosed than men.
- Usually women tend to be older and with more co-morbidities like hypertension, diabetes.

- Typical Symptoms commonly associated with Myocardial infarction or a heart attack in both sexes include chest pain, discomfort, pressure, or squeezing; pain radiating to the neck, shoulder, back, arms, or jaw.
- Atypical symptoms include palpitations; dyspnea; heartburn, nausea, vomiting, epigastric pain, diaphoresis and dizziness.
dyslipidemia and heart failure.

- The treatment of heart attacks is not gender specific. The guidelines do not offer different treatment based on sex.
- Women are less likely to receive standard treatment like aspirin, cholesterol reducing medications (statins) due to confusion in the diagnosis.
- Women less frequently undergo Coronary angiography or angioplasty or bypass surgery compared to men.
- All these factors lead to a higher cardiovascular mortality in women less than 65 years of age, as compared to men with heart attacks.

*Dr. Nihar Mehta,
Full Time Consultant Cardiologist
Jaslok Hospital & Research Centre

CANCERS IN WOMEN

Women can be affected by cancers: Breast, Cervical, Endometrial and Ovarian; to name a few. Knowing about these cancers and what one can do to prevent them or help them detect earlier can help save one's life. Most of the cancers related to the genital organs can be diagnosed at an earlier stage and the treatment modalities which are available can prevent a major surgery and increase the survival rate.

How to detect breast cancer:
1. Self Examination
   By palpation of breasts monthly after your period. Look for: asymmetry, lumps, discharge from nipples (blood), nodularity, ulcerations
2. Examination by a doctor
3. Sonomammography
   - This uses x rays and sonography to find out any breast abnormalities.
   - The American Cancer Society recommends:
     40-44 years: if any family history of breast cancer
     45-54 years: annually
     55+ years: every 2 years

Treatment:
- If detected early, treatment may be limited to lumpectomy.
- If spread, may require unilateral or bilateral mastectomy with axillary lymph node clearance (depending on stage of disease). This may be supplemented with chemotherapy, radiotherapy and hormonal therapy.

Breast cancer

- 1 in 8 women will be diagnosed with breast cancer in their lifetime!
- Can occur at any age; risk increases with age.
- Breast cancer is increasing in India; the average increase over a 30 year period is 11% per decade.
- It is increasing both in young (11%) and in older women (16%).
- There is an estimated 1-1.25 lakh new breast cancer cases in India every year.

Cervical cancers

This is also a leading cause of cancer in women in India and third in the world.

CERVICAL CANCER INCIDENCE
- Around 15-20 new cases per 1 lakh women per year in urban India. Incidence in rural India is 1.5-2 times higher.
- Human Papilloma Virus (HPV) is one of the main agents in causing cervical cancer, which is sexually transmitted.

CLINICAL FEATURES
- Foul smelling discharge from vagina
• Inter menstrual bleeding
• Post coital bleeding
• Fragile mass in vagina (late feature)
• Screening for cervical cancer is simple and fast. It takes less than a minute to do so. The woman needs to lie down on the edge of the examination table and a speculum is inserted to visualize the vagina and cervix.
• PAP smear is an easy, painless, effective method to screen for cervical cancer. A few cells are removed from the cervix with the help of a brush/spatula and dipped in liquid and sent for cytology.
• Pap smear guidelines for all sexually active girls and women of all ages: UK (Royal College of Obstetricians and Gynaecologists-RCOG) recommends it to be done once in 3 years. The American guidelines recommend it every year. Since the incidence of cervical cancer is very high in India it is recommended every year here too.
• However the uptake of pap smear as a screening tool is very low among Indian women and hence a gynaecologist might take the opportunity to do a Pap Smear whenever a woman comes for any gynaecological examination.
• RCOG also recommends that if 3 consecutive Pap smears are normal, one can stop doing pap smears after the age of 65 years, provided the last pap smear is done within the last 5 years and only if precancerous or cancerous condition of the cervix is not detected in the past.

**TREATMENT:**

• In early stages, colposcopic directed excisional biopsies can be done.
• Local ablative measures in form of cryotherapy, electrotherapy or laser vapourisation are available.
• Also excisional methods like cone excision and large loop excision of transformation zone are available.

In advanced cases, Wertheims hysterectomy, radiotherapy and chemotherapy.

**PREVENTION:**

• Usage of condoms
• Maintain local hygiene
• Delay sexual exposure

• HPV vaccines: Gardasil and Cervarix.
• Gardasil: additional protection against genital warts. 3 doses of the vaccine needs to be taken within 6 months.
• Provides protection for 25 years. No need for a booster dose as of now.

Who should take? Every female from 9-12 years and catch up vaccine can be given up to 45 years, earlier taken the better.

**Ovarian cancer**

• Epithelial ovarian cancers occur usually between 40 to 60 years. Seen in women with family history of cancers and in women taken infertility treatment for a long time in the past.
• Screening with USG and a blood tests. CA 125 levels.
• Rapidly growing cancer with symptoms of abdominal pain and swelling with ascitis.

**Treatment:** Hysterectomy with bilateral removal of tubes and ovaries followed by chemotherapy.

**Endometrial (uterine) cancer**

• Now seen on the rise with diabetes, hypertension, obesity and PCOS.
• Patients complain of post-menopausal bleeding.
• Regular USG of pelvis along with hysteroscopy will help in its diagnosis.

**Treatment:** Hysterectomy with chemotherapy and radiotherapy.

A patient with blood cancer was treated with chemotherapy, radiotherapy and stem cell therapy at Jaslok Hospital & Research Centre. She became spontaneously pregnant 5 years after this treatment and delivered a healthy baby. Thus, cancer if diagnosed early and treated, one can live a healthy life.

Cancer should not be treated as an end; but as a new beginning.

*Dr. Danny Laliwala, Hon. Consultant, Dept of OB/Gyn
Jaslok Hospital & Research Centre*

**RECENT ADVANCES IN BREAST CANCER TREATMENT Dr. Reetu Jain**

Breast cancer is the commonest female cancer. Collectively, US, India and China account for almost one third of the global breast cancer burden.

In India it accounts for all female cancers with a mortality of about 1 in 8 (12%) women in the US will develop invasive breast cancer during their lifetime.

The diagnosis and treatment is at an exciting phase due to better understanding of tumour biology at molecular level. This translational research has helped in improvement of survival not only in early stages of breast cancer but in advanced stages too. It has resulted in improving the quality of life in metastatic stage also.

Five particular advances have made a notable impact on the lives of breast cancer patients during the past 10 years. These include HER2-directed therapies, gene expression testing, hormonal therapy, less-invasive surgery, (Oncoplastic surgery) and healthy lifestyle choices aimed at prevention.
**Causes of breast cancer**

Lifestyle, environmental and genetic factors are being studied to identify the causes of breast cancer. Ongoing studies are looking at the effect of exercise, weight gain or loss, and diet on breast cancer risk.

BRCA1 and BRCA2 genetic mutations are identified as the genes responsible for breast cancer. Scientists are also exploring how common gene variations may affect breast cancer risk. Each gene variant has only a modest effect in risk (10% to 20%), but when taken together they may potentially have a large impact.

**Intraoperative radiation therapy (IORT)**

One of many new technologies that deliver radiation more precisely, helping minimize damage to healthy tissue and treatment times. With IORT, radiation is delivered directly to the tumor site after a surgeon has removed the tumor. A 30-minute dose of IORT may be able to replace weeks of traditional radiation.

**Exercising and maintaining a healthy weight**

“Over the past five to 10 years, there has been increasing understanding of the role of overweight and obesity and physical activity in terms of breast cancer risk.

These findings are significant because they give survivors and those looking to prevent breast cancer a way to control risk with everyday choices.

With the past 10 years of progress in breast cancer treatment and research, women facing the disease today have many promising options as therapies become more tailored to particular disease types and are designed to minimize side effects. And with greater understanding of risk factors and preventive lifestyle choices, women are gaining more ways to reduce the risk of diagnosis and recurrence on a daily basis. All in all, it’s progress worth celebrating.

*Dr. Reetu Jain, Medical Oncologist & Stem Cell Transplant Physician, Jaslok Hospital & Research Centre*

**ONCOPLASTIC SURGERY**

Breast-conserving surgery (lumpectomy or partial mastectomy) can often be used for early-stage breast cancers. Combining cancer surgery and plastic surgery techniques, known as oncoplastic surgery. This typically involves reshaping the breast at the time of the initial surgery, and may mean operating on the other breast as well to make them more symmetrical. This approach is still fairly new, and not all doctors are adopting this treatment.

**TARGETED THERAPIES**

With better understanding of the disease biology and pathogenesis, newer targeted drugs are being developed and available. They are relatively safe and non-toxic. Targeted therapies are a group of newer drugs that specifically take advantage of gene changes in cells that cause cancer.

**Drugs that target HER2**

HER2 is a receptor on the breast cancer cells. The presence of this receptor indicates an aggressive disease with decreased survival. A number of drugs that target HER2 are currently in use, including trastuzumab (Herceptin), pertuzumab (Perjeta), ado-trastuzumab emtansine (Kadcyla), and lapatinib (Tykerb).

These are very effective drugs with minimal toxicities. These drugs are used in combination with chemotherapy. They have shown an improvement in response rate up to 20-25% with improved survival in advanced disease.

Some studies have found that breast cancers surrounded by many new, small blood vessels are likely to be more aggressive.

Bevacizumab (Avastin) is an example of anti-angiogenesis drug. Several other anti-angiogenesis drugs are being tested in clinical trials.

Other potential targets for new breast cancer drugs have been identified in recent years. Drugs based on these targets are now being studied, but most are still in the early stages of clinical trials.

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Prayer is not enough, Early detection is.
UNDER THE KNIFE

Dr. Sudeshna Ray

No one wants to go under the knife; the psychological trend is to evade any form of surgical intervention till it is absolutely necessary. The whole world is hence working towards non invasive ways of handling conditions as far as possible and keep surgery as an option where all the other have either failed or when benefits of surgery clearly outweigh any other form of treatment.

Surgery in women has undergone an ocean of change over the last few decades. The trend is towards giving the women the advantages of scarless procedures, mini scars, considerably less pain, lesser stay in the hospital, earlier recovery and earlier reassumption of work.

This has allayed a lot of concern among women about a surgical procedure.

Some gynecological conditions where a woman needs to be under the knife:
1. Uterine fibroids
2. Abnormal bleeding
3. Ovarian cysts and tumors
4. Pelvic organ (Uterus, bladder, vagina) prolapsed/Descent
5. Uterine/Cervical/Ovarian cancers
6. Endometriosis and Adenomyosis
7. Ectopic pregnancy
8. Fertility problems

The various ways a surgery can be done

1. The traditional open method
   - A bikini or vertical long scar is given
   - The only way to do a cesarean section to deliver a baby needed for surgeries like cancer or very large tumors sometimes might take several weeks/months to recover

2. The Keyhole/Laparoscopic method
   - Few tiny cuts on the tummy
   - Used for surgery for fibroids, hysterectomy (removal of womb), ovarian cysts, tumors, pelvic adhesions, ectopic pregnancy
   - Less pain, early discharge from hospital, faster post operative recovery

3. The Robotically-assisted keyhole method
   - Few tiny cuts on tummy
   - Uses the magnified vision and precision of robotic technology to enhance the quality of the surgery
   - Extremely precise and technologically advanced procedure
   - Considerably less pain and remarkably faster recovery
   - Can be done for fibroids, hysterectomy, cancer and complex prolapse procedures

4. The scarless procedure
   - Mainly meant for Hysterectomy (removal of the womb)
   - Scientific evidence suggests this to be the best way for a hysterectomy
   - No visible scar on the body
   - Woman can start eating and walking by 8 hours of surgery; some places in the US it is done as a day care procedure

EGG FREEZING

Dr. Firuza Parikh

Today, IVF is a household word and is considered a routine treatment rather than the revolutionary advancement it was 38 years ago. However, several offshoots of the IVF procedure have benefits that patients enjoy and utilize. One such advance is Oocyte freezing.

At birth, a woman is born with half a million eggs. Unlike a man who continues to produce sperm throughout most of his life, a woman has a finite number of eggs which are by and large depleted in the early forties. These eggs are stored in her ovaries, each inside its own sac called a follicle. At puberty, her body begins producing various hormones that cause the eggs to mature. This is the beginning of her first cycle; it's a cycle that will repeat throughout her life until the end of menopause. At time of ovulation, the blood supply to the ovary improves and the ligaments contract, pulling the ovary nearer to the fallopian tube, allowing the egg, once released, to find its way into the tube. Just before ovulation, a woman's cervix secretes an abundance of clear “fertile mucous”. Fertile mucous helps the sperm's travel toward the egg. Inside the fallopian tube, the egg is carried along by tiny, hair-like projections, called "cilia" toward the uterus. Fertilization occurs if the time is opportune.

Egg quality and quantity both start declining slowly in most
women in the mid-thirties. Both quantity and quality of eggs decline more rapidly after about the age of 37. It becomes much more difficult to get pregnant after 40 and by 43 years, conception in women is more anecdotal than a reality. The increased rate of chromosomal abnormalities in eggs of women with advanced age is the main cause of this qualitative decline. Thus the woman’s biological clock slows down by 37 and stops ticking by 42. Egg freezing can potentially lock in the quality of the woman’s eggs at the age when she freezes them. She can then preserve her fertility by using those frozen eggs years later when the quality of the remaining eggs in her ovaries are significantly diminished. The quality of frozen eggs does not decline significantly over time.

What is the right time for egg freezing?

The chances for pregnancy are greater if a woman uses younger eggs i.e. eggs she froze in her 20s or early 30s, rather than later. However, a woman can also freeze her eggs at 40, but the expected success rate is low. Thus the earlier a woman freezes her eggs, better the quality when those eggs are eventually thawed.

Who is a candidate for egg freezing?

Egg freezing can be of immense help to any woman who wishes to preserve her fertility to a later date in the future.

Some of the common indications for egg freezing are

- In order to delay childbearing for personal and social reasons.
- In women diagnosed with cancer prior to starting chemotherapy.
- Risk of early menopause.
- Objections to storing frozen embryos for religious, or moral reasons.
- While a woman is waiting for the right partner.
- Couples who are undergoing In-vitro fertilization (IVF) and are not able to fertilize eggs the same day due to non-availability of sperm from the male partner.
- Couples undergoing IVF who have surplus eggs and do not wish for those eggs to be fertilized and frozen as embryos.
- Freezing eggs can be a very reassuring and empowering step, and it allows women to take control of their own fertility.

What is the egg freezing process?

Although sperms and embryos are easier to freeze, the egg being the largest cell in the human body, contains a large amount of water which can prevent optimal freezing. When frozen, ice crystals form that can destroy the cell. The egg needs to be dehydrated and the water needs to be replaced with an anti-freeze substance prior to freezing in order to prevent ice crystal formation. Also the shell of the egg hardens when frozen, hence sperm must be injected with a needle to fertilize the egg using a standard technique known as ICSI (Intra-cytoplasmic sperm injection).

The Anti-Müllerian Hormone (AMH) is a hormone in the ovarian follicles. It is a key in gauging a woman’s fertility. The importance of AMH as regards to egg freezing cannot be over emphasized. AMH levels can help determine the number of eggs you may be able to retrieve as its levels correlate with the number of ovarian follicles, making the hormone a good indicator of ovarian reserve. Testing these levels is also helpful in determining whether a woman has diminished ovarian reserve or premature ovarian failure or PCOS. Since the levels of AMH in the blood do not fluctuate much, the test can be done at any point during the menstrual cycle. Women with higher concentrations of AMH have a superior response to ovarian stimulation and are likely to produce more eggs for freezing as compared to women with low AMH.

A low AMH indicates there is a problem with the quantity and quality of a woman’s eggs. Women with low AMH tend to have poor response to fertility drugs used for ovarian stimulation. Hence the Anti-Müllerian Hormone (AMH) testing is the best and most accurate predictor of a woman’s remaining ovarian reserve.

The procedure of egg freezing

The procedure of egg freezing has multiple steps. Ovulation Induction is the first step in the process.

Ovarian stimulation

At the beginning of the menstrual cycle, synthetic
hormones are administered in order to stimulate multiple eggs. Several different be needed, including:

**Medications for ovarian stimulation**

To stimulate your ovaries, typically medication such as FSH or human menopausal gonadotropins are employed along with a GnRH antagonist to prevent premature ovulation. During treatment, there are follow-up visits sonography scans in order to monitor the development of egg containing mature follicles. Blood tests are conducted on a regular basis to see the response to ovarian-stimulation. Estrogen levels typically increase as follicles develop and progesterone levels remain low until after ovulation.

When the follicles are ready for egg retrieval - generally after 8 to 14 days of injections, the trigger of human chorionic gonadotropin or decapetyl is given to bring about the final maturity of the oocytes.

**Egg retrieval**

Egg retrieval is done by transvaginal ultrasound under mild anesthesia. A suction device connected to the needle gently aspirated the egg from the follicle. Multiple eggs can be removed from the follicles in about 15 to 20 minutes. Shortly after the eggs are harvested, they’re cooled to subzero Celsius temperatures to stop all biological activity and preserve them for future use. The make-up of an unfertilized egg makes it more difficult to freeze and lead to a successful pregnancy than does the make-up of a fertilized egg (embryo). Embryo labs use substances called cryoprotectants to help prevent ice crystals from forming during the freezing process.

**Freezing**

The most commonly employed freezing process is Vitrification. In this method, high initial concentrations of cryoprotectants are used in combination with cooling so rapid that intracellular ice crystals don’t have time to form. The eggs are frozen the same day and stored in liquid nitrogen tanks. The entire process takes approximately 4-6 weeks to complete the egg freezing cycle and is consistent with the initial stages of the IVF process.

**Long term safety**

During an egg freezing cycle, an attempt is made to extract multiple eggs in the same sitting. Fertility medications in this “super ovulation” cycle help in achieving a greater yield. Since not every egg will result in a pregnancy, a large number of eggs are extracted at once to give the best chance of harvesting viable eggs, and to have a high enough cache for subsequent pregnancy attempts later. Multiple egg retrieval cycles may be the goal for optimal number of eggs. Women over 30 should ideally have at least 20 eggs cryopreserved.

**#HairleysAngels**

Jaslok Hospital & Research Centre hosted a Hair Donation Drive on International Women's Day, 8th March. Sapna Bhavnani, hairstylist to Bollywood stars gave 52 women from all walks of life a new look and the hair was collected to make wigs for cancer patients who have lost their hair due to chemotherapy.

*Dr. Furuze Parikh, Director - Department of Assisted Reproduction Jaslok Hospital & Research Centre*
Over 300 women called in offering to donate their hair and the event was a tremendous success. The donated hair was handed over to the NGO Cope with Cancer.

While speaking on the occasion, Ms. Sapna Bhavnani said, “Woman’s Day is not just about women, it’s about the community coming together to celebrate gender equality. Like every day should be. So proud of this initiative by Jaslok Hospital and I hope for many more”.

The volunteers who shared their beauty by donating hair included corporates, students, existing patients in the hospital.

Dr. Tarang Gianchandani, CEO at Jaslok Hospital said “The psyche of a person and positivity plays a very important role in recovery from any disease, especially cancer. Due to lack of awareness on hair donation, there are very few hair doners in India. We want to spread awareness and get people to donate their hair, knowing that it would be used for someone who needs. I am proud to have seen so many women who are beautiful inside out to stand for a noble cause. They helped those patients of cancer who need to gain confidence back through their hair and also taught all of us that beauty is in the eye of beholder & from within. Losing hair is like losing a nail. You look beautiful with and without hair, so celebrate your inner beauty & spirit every day.”

Watch out for details of the next Hairathon in the press.

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*Dr. Sudeshna Ray, Hon. Consulvant & Co-ordinator, Dept of ObGyn
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"The true physician and parent of the future will not medicate the body with drugs so much as the mind with principles. The caring mother will teach her child to assuage the fever of anger, hatred, malice, with the great panacea of the world - love. The coming physician will teach the people to cultivate cheerfulness, goodwill and noble deeds for a health tonic as well as a heart tonic, and that a merry heart doeth good like a medicine."

- Ralph Waldo Trine